

Proceedings of the Royal Society. It was not described, however, till the year 1872, when Sir Wyville contributed a notice of the "Porcupine" Crinoids to the Royal Society of Edinburgh; and in the following year he reproduced this description in *The Depths of the Sea*, together with a woodcut which gives a very fair idea of the principal characters of the type. All the entire specimens obtained were dredged at Station 17; but a few fragments of stem and arms were also met with at Station 17A (740 fathoms), together with ten specimens of *Antedon lusitanica*. Thirty specimens were recently dredged by the "Talisman" in 1500 metres off Rochefort. Dr. Gwyn Jeffreys<sup>1</sup> records that "portions of the arms occurred in several other of the 'Porcupine' dredgings on the Lusitanian coasts; and joints of apparently the same species have been found by Prof. Seguenza in the Zanclean formation or older Pliocene near Messina." The latter point, however, can hardly be properly decided without a careful study of both types.

In the structure of the ray-divisions and arms, *Pentacrinus wyville-thomsoni* is closely related to *Pentacrinus mülleri*, *Pentacrinus maclearanus*, and *Pentacrinus alternicirrus*, especially the latter; but it is at once distinguished from them all by the shape of the nodal joints, the short stout cirri which they bear, and the great length of the internodes which separate them. It is also remarkable for the manner in which the stem ends below in a nodal joint which is closed up beneath and rounded off, as shown in Pl. XXII. fig. 27. According to Sir Wyville Thomson<sup>2</sup> "all the stems of mature individuals of this species (which were dredged by the 'Porcupine') end uniformly in a nodal joint, surrounded with its whorl of cirri, which curve downwards into a kind of grappling root (Pl. XIX. fig. 1). The lower surface of the terminal joint is in all smoothed and rounded, evidently by absorption, showing that the animal had for long been free" (Pl. XXII. fig. 27). The positions of this terminal nodal joint and the corresponding length of stem in three individuals which I have examined are as follows:—stem 80 mm. long, terminating at the fifth node; stem 90 mm. long, terminating at the sixth node; stem 155 mm. long, terminating at the seventh node.

The zoologists of the "Talisman" claim to have proved, however, that Sir Wyville Thomson was wrong in his belief that the individuals dredged by the "Porcupine" were leading a semi-free existence, loosely rooted in the soft mud. In one of a series of popular articles by Mons. H. Filhol,<sup>3</sup> a member of the "Talisman" expedition, it is stated that Sir Wyville came to this conclusion after having examined *one* of the "Porcupine" specimens; and a free translation is given of the last sentence of the paragraph just quoted, from which, however, the words "in all" are entirely omitted. It is thus made to appear as if Sir Wyville had drawn his conclusions from the condition of only one example of *Pentacrinus wyville-thomsoni*, which is very far from being the case; while he also stated in the next paragraph to that quoted by Filhol that he had remarked

<sup>1</sup> *Proc. Roy. Soc.*, 1870, vol. xix. p. 157.

<sup>2</sup> *Proc. Roy. Soc. Edin.*, vol. vii. p. 767; *The Depths of the Sea*, p. 444.

<sup>3</sup> *Explorations sous-marines, Voyage du "Talisman," La Nature*, No. 568, April 19, 1884.